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ABSTRACT

This report discusses findings from the Monitoring the Future study in relation to adolescent cigarette preferences. Results show that in 1998, 19.1% of the eighth graders, 27.6% of the tenth graders, and 35.1% of the twelfth graders reported smoking within 30 days prior to the survey. By the time they finish high school, 65.2% of American young people say they usually smoke Marlboro. Newport and Camel accounted for most of the remainder. Those who have an established smoking habit are more likely to have a brand that they usually smoke. The proportion of adolescents who purchase their own cigarettes rises with age. There is no indication that the grade level at which a current smoker first began smoking cigarettes affects his or her current brand preferences. Marlboro appears to be at least as popular among girls as among boys. Marlboro is the brand of preference for Whites (61% - 70%) and Hispanics (57% - 65%) while Newport is the brand of preference for African-Americans (71% - 82%). Marlboro is the leading brand in all four U.S. regions. Contains Appendix A: Text of Questions and Appendix B: Confidence Intervals and Selected Significance Tests for Three Cigarette Brands. (Contains 3 figures and 20 tables.) (MKA)

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paper 45

CIGARETTE BRAND PREFERENCES AMONG ADOLESCENTS

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Monitoring the Future: A Continuing Study of the Lifestyles and Values of Youth

As its title suggests, this study is intended to assess the changing lifestyles, values, and preferences of American youth on a continuing basis. Each year since 1975 about 17,000 seniors have participated in the annual survey, which is conducted in some 130 high schools nationwide. In addition, subsamples of seniors from previously participating classes receive follow-up questionnaires by mail each year.

This Occasional Paper Series is intended to disseminate a variety of products from the study, including pre-publication (and somewhat more detailed) versions of journal articles, other substantive articles, and methodological papers.

A full listing of occasional papers and other study reports is available from Monitoring the Future, Institute for Social Research, The University of Michigan, P.O. Box 1248, Ann Arbor, MI 48106.

CIGARETTE BRAND PREFERENCES AMONG ADOLESCENTS

Monitoring the Future Occasional Paper 45

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1999

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BACKGROUND

Monitoring the Future is an ongoing study of American young people, based in part on annual surveys of nationally representative samples of eighth, tenth, and twelfth-grade students attending public or private secondary schools in the coterminous 48 states. Since its inception in 1975, it has been funded through a series of investigator-initiated research grants from the National Institute on Drug Abuse to a team of social scientists at the University of Michigan's Institute for Social Research. The epidemiological results of these surveys are published in an annual series of monographs (see Johnston, O'Malley, & Bachman, 1998). The most recent survey, conducted in the spring of 1998, involved nearly 50,000 respondents in 422 schools.

The 1998 survey contained a new question about the brand preferences of those respondents who indicated smoking one or more cigarettes in the prior 30 days – that is, "current smokers." The question read, "What brand of cigarettes do you usually smoke? (Brands are in alphabetical order. Mark only one.)" This question was followed by a list of 23 of the largest-selling brands. The options of "Other" brand and "No usual brand" were also provided to respondents. (See Appendix A for the question and full answer set.)

Between two- and three-thousand ***current smokers*** answered the brand preference question at each grade level (2,048 eighth graders, 2,708 tenth graders, and 2,335 twelfth graders). Not all participants in the study were asked this question because it was contained on only three of the four questionnaire forms used in eighth and tenth grade, and on three of the six questionnaire forms used in twelfth grade.

A number of interesting findings have emerged from the initial analyses of this question—particularly those having to do with the degree of market concentration found, and the extent of differences among subgroups. These findings are presented below.

It should be noted that it is illegal in virtually all states for young people below the age of 18 to purchase, or to be sold, cigarettes. While approximately half of the twelfth graders had reached their 18th birthday by the time the survey was conducted, virtually none of the eighth- or tenth graders had done so.

MAIN FINDINGS

Data are presented here for the total samples of current smokers at each of the three grade levels, as well as for selected subgroups at each of the three grade levels. Some of the tables contain a column of data labeled "all grades" which is a simple unweighted mean of the percentages observed at each of the three grade levels. This is to provide at a glance a summary of relationships, but should not be interpreted as representing all smokers in grades 8 through 12.

The numbers of cases in the analyses sometimes are small, particularly for certain subgroups, so the reader is cautioned to attend to the sample sizes which are presented in each table and figure. Confidence intervals (95% level) around point estimates are given for each of the three grades in Appendix B, separately for each of the three major brands smoked by young people.

Levels of Cigarette Smoking

In 1998 the proportion of students reporting smoking any cigarettes in the prior 30 days was 19.1% of the eighth graders, 27.6% of the tenth graders, and 35.1% of the twelfth graders. These comprise the current smokers who answered the questions regarding brand preference. Other statistics on levels and trends in smoking at the three grade levels are presented in Table 1.

Brand Preferences

By the time they finish high school, nearly two-thirds (65.2%) of American young people who are current smokers say they usually smoke *Marlboro*. Two other brands account for most of the remainder–*Newport* (13.3%) and *Camel* (9.6%). These three brands account for 88.1% of the current smokers in twelfth grade (another 4.1% say they have "no usual brand"). Each of the other brands is smoked by less than 2% of current smokers in twelfth grade, usually by much less. (Table 2 and Figure 3).

Among younger smokers (Figures 1 and 2) these three brands also predominated: They are the usual brand for 81.6% of the current smokers in eighth grade (another 9.7% have no usual brand), and 86.1% of current smokers in tenth grade (where 6.4% say they have no usual brand). Note that the proportion saying they have no usual brand declines with age.

While *Marlboro* is the predominant brand at all three grade levels, it accounts for an increasing proportion of smokers at each higher grade level: 53.7% of the eighth graders; 61.1% of the tenth graders, and 65.2% of the twelfth graders. In part, this may be due to the increasing proportion of students who have a brand preference at older ages.

The second most widely-used brand of cigarettes at all three grade levels is *Newport*. It accounts for 22.5% of the eighth-grade smokers, but its market share declines to 17.7% among tenth-grade smokers, and 13.3% among twelfth-grade smokers.

The third-ranked brand in all three grades is *Camel*. Like *Marlboro*, *Camel*'s share of the youth market appears to increase with grade level: 5.4% of the current smokers in grade 8 say they usually smoke *Camel* cigarettes, 7.3% in grade 10, and 9.6% in grade 12.

Level of Smoking

Among current smokers at all grade levels, those who have an established smoking habit are more likely to have a brand that they usually smoke (Table 3). For example, among eighth graders, 15% of the current smokers who do not yet smoke daily said they have no usual brand that they smoke, vs. only 2.5% of those who smoke one-half pack per day. Similar differences are found at grades 10 and 12. In fact, by twelfth grade practically none of the daily (but less than half-pack a day) smokers (1.3%) and half-pack-a-day smokers (0.7%) are without a usual brand of cigarettes. Thus, it appears that brand loyalty begins to be established very early. This striking fact helps to show why tobacco companies might have a strong motivation to induce young people to establish a preference for their brands at an early age.

Purchasing Their Own Cigarettes

Whether a student purchases his or her own cigarettes was determined by answers to questions about the source of the cigarettes they smoke. Those who indicated that they made any purchase in the past 30 days from any of the following sources were coded as having purchased their own cigarettes: from a vending machine, through the mail, picked them up at a store, or was handed them in a store by a clerk. (See Appendix A for the exact question wording.)

As would be expected, the proportion of adolescents who purchase their own cigarettes rises with age; only 35% of the eighth graders who are current smokers report purchasing cigarettes in the prior 30 days, whereas 75% of twelfth graders do. (See the numerical distributions at the bottom of Table 4.)

Students who purchase their own cigarettes are a bit more likely to report having a usual brand (Table 4). For example, among eighth graders, only 6% of those who purchase their own cigarettes say they do *not* have a usual brand, vs. 12% of those who do not purchase their own. A similar difference exists at the higher grades, as well (2% vs. 10% in tenth grade, respectively, and 2% vs. 13% in twelfth grade).

Age of Smoking Initiation

We examined the grade of initiation of smoking a first cigarette among current smokers in grades 10 and 12 to determine whether those who initiated smoking earlier were more or less likely to develop a particular brand preference. There is no indication that the grade level at which a current smoker first began smoking cigarettes affects his or her current brand preferences (see Table 5).

DIFFERENCES AMONG DEMOGRAPHIC SUBGROUPS

Differences among subgroups were examined across a number of demographic characteristics including gender, race/ethnicity, region, population density, college plans, and level of parents' education. Tables 6 through 11 provide the brand preference data for the various subgroups defined on these dimensions, and Appendix B present the confidence intervals around these estimates for the three predominant brands (*Marlboro, Newport*, and *Camel*) along with significance tests for the differences observed among the groups. Some very important differences were found, as well as some surprising similarities.

Gender Differences

One of the more surprising findings is that *Marlboro* appears to be at least as popular among girls as among boys at all three grade levels, despite the virtually exclusively male depictions in *Marlboro* advertising. Among current smokers at eighth grade, 55.4% of girls vs. 51.7% of boys say they smoke *Marlboro* cigarettes; at tenth grade, 64.1% vs. 58.0%; and at twelfth grade, 66.2% of girls vs. 64.6% of boys (Table 6). (None of these gender differences is statistically significant: See Appendix B.)

Gender differences with respect to *Camel* cigarettes are more in line with conventional wisdom. In eighth grade, 7.3% of boys who are current smokers vs. 4.2% of such girls say their usual brand is *Camel*; in tenth grade, 9.9% vs. 5.0%; and in twelfth grade, 11.2% for boys vs. 8.3% for girls. Still, considering the strong emphasis on male themes in the *Camel* ads, a significant proportion of girls say that *Camel* is the brand they usually smoke. (The gender difference is statistically significant at tenth grade only, but the consistency of the findings across all three grades increases our confidence in their validity.)

Newport shows rather little gender difference. At all grades slightly more females than males report this as their preferred brand, although none of these grade-specific differences reaches statistical significance.

Racial/Ethnic Differences

The sample sizes for the two largest minority groups—African Americans and Hispanics—are quite small at each grade level. The numbers of African American respondents reporting brand preference are only 166 at grade eight, 178 at grade ten, and 106 at grade twelve, for a total of 450 respondents. The numbers of Hispanic respondents on the brand preference question are 257 in grade eight, 245 in grade ten, and 156 in grade twelve, for a total of 658. (The numbers of African American respondents are lower, because African American teens have much lower smoking rates than either whites or Hispanics.)

The ethnic differences in brand preference are dramatic (see Table 7). While the great majority (from 61%-70%) of white adolescents at all three grade levels say they smoke *Marlboro*–as do a smaller, but still substantial, majority of Hispanics (from 57%-65%)–fewer than 10% of the African American adolescents at any grade level smoke *Marlboro*. Instead, their predominant brand is *Newport* (from 71%-82%). Virtually none of the African American adolescents smoke *Camels* (1.7% at eighth grade and 0.0% at tenth and twelfth grade).

Hispanic students at all grade levels appear to be a bit more likely to smoke *Newport* than white student respondents, but their preference rates for *Newport* are not nearly as high as among African Americans. They also appear to be a bit less likely than white students to smoke *Marlboro* or *Camel*, although *Marlboro* is still the choice of the majority of Hispanic students.

Among white respondents, fully 70.2% smoke *Marlboro* by twelfth grade. The proportion increases from 61.1% in eighth grade to 66.1% in tenth grade. This means that the overall increase by grades noted earlier for the popularity of *Marlboros* is highly unlikely to be explained by differential dropout rates among ethnic groups.

Of the three ethnic groups, whites are the most likely to smoke *Camel* cigarettes.

Region

Because of the limited numbers of cases, the regional differences presented here are not always definitive. To the extent that a finding replicates across the three grades–the samples for which are drawn independently of one another–it is considerably more credible.

Marlboro is the leading brand in all four regions, although at all grade levels it tends to account for a lower percent of the brand choices in the Northeast than in the other three regions (see Table 8). (An analysis of variance shows a significant difference among the regions at tenth and twelfth grades in *Marlboro* use.)

At all grade levels the West shows the lowest proportion of students who report smoking *Newport* and the Northeast shows the highest proportion. (The differences among regions in *Newport* use are significant in tenth and twelfth grades and very close to significant in eighth.) Additionally, from 3% to 7% of the students in the Northeast report smoking *Parliament*—far higher than any of the other three regions (where less than 1% at any grade level smoke that brand).

Marlboro accounts for the majority of smokers in all grades for all regions, except the Northeast, where it accounts for 40% of the eighth-grade current smokers, 47% in tenth grade, and 54% in twelfth grade.

Population Density

Marlboro is the most popular brand at all three population density levels, but it is most dominant in the non-metropolitan areas (see Table 9). (The differences in *Marlboro* use are significant for grades 8 and 10.) *Newport* is more prevalent among the metropolitan areas at eighth and tenth grades, whereas differences by urbanicity are rather small by twelfth grade. (These differences are significant at grade 10 and just short of significant at grade 8.)

There are not large or consistent differences in the use of *Camel* cigarettes associated with population density.

College Plans

Among current smokers of the major brands, there is very little difference in brand preference at any of the three grade levels as a function of whether respondents expect to complete four years of college or not (Table 10).

Parental Education

Parental education is used as an indicator of socioeconomic status. An index based on the level of education attained by both parents is used, or the level of education of the single parent if only one is present. (For a full description of the question and procedures see Johnston et al., 1998.)

Table 11 provides an overview of these findings based on a three-level index of parental education. The analyses discussed below are based on the full five-level index of parental education and are presented in Appendix B. Table B-3 shows that the use of *Marlboro* cigarettes tends to be negatively associated with social class among twelfth graders (an analysis of variance is significant at the .05 level) with the only exception being the relatively small lowest stratum where race composition is likely having an effect. The rates array ordinally from 54% in the highest stratum to 71% in the next-to-lowest. (The lowest is at 63%.) There is much less of a differential at earlier grades, although *Marlboro* use appears to be lowest in the top stratum even at earlier grades.

Newport shows high preference rates in the bottom two strata at twelfth grade–21% in the lowest stratum and 15% in the next to lowest, vs. 9% to 11% in the other strata (Table B-6). (The analysis of variance is significant. Again, racial composition is likely to account for much of this difference.) However, there is much less variability at grades 8 and 10 except that the top stratum still has rates lower than the others.

Camel use also varies with social class, as represented by parental education level. In general, it is a positive association, with the top one or two strata having the highest preference

for *Camel* cigarettes at all three grade levels. (The analysis of variance shows significant differences among the strata at all grade levels, though they are not specifically testing for ordinality or linearity in the relationship.) Again, the differences are most striking at twelfth grade, where 22% of the top stratum reports *Camel* use vs. about 4% or 5% of the bottom two strata (Table B-9).

SUMMARY

In sum, the very high rates of cigarette smoking found among American teenagers in the late 1990s are associated with the popularity of just three brands: *Marlboro* (a Philip Morris product), *Newport* (a Lorillard product), and *Camel* (an RJR/Nabisco product). Perhaps not coincidentally, these have been among the most heavily advertised and promoted cigarette brands, in particular *Marlboro*; and also perhaps not coincidentally, two of them (*Newport* and *Camel*) have aggressively pursued youth-oriented themes in their advertising–the "Alive with pleasure" theme and the Joe Camel theme, respectively.

The clearly dominant brand, however, is *Marlboro*, which has successfully identified itself with the American icon of the Western cowboy, as well as with certain competitive sports, like Formula One racing. By twelfth grade, nearly two-thirds of students who are current smokers (65%) smoke *Marlboro*. Despite the strongly male orientation of the *Marlboro* advertising themes, however, *Marlboro* is at least as popular among girls in their teens as among boys.

Just as there are dramatic racial/ethnic differences in rates of smoking among adolescents (with African American teenagers having by far the lowest rates), there also are dramatic racial/ethnic differences in brand preferences among those who do smoke. *Newport*, a mentholated cigarette, predominates among African American teenage smokers to an even greater extent than *Marlboro* predominates among white teenage smokers.

Finally, the fact that so few of the current smokers in their teen years do not already have a brand that they usually smoke (10% of eighth graders, 6% of tenth graders, and 4% of twelfth-grade current smokers) helps to illustrate why tobacco companies might have a compelling interest in having their advertising and promotion reach underage children.

REFERENCES

Johnston, L.D., O'Malley, P.M., & Bachman, J.G. (1998). *National survey results on drug use from the Monitoring the Future study, 1975-1997. Volume I: Secondary school students.* (NIH Publication No. 98-4345) and *Volume II: College students and young adults.* (NIH Publication No. 98-4346). Rockville, MD: National Institute on Drug Abuse.

Figure 1

Grade 8: Brands Usually Smoked by Current Smokers, 1998

(entries are percentages)
Approx. N=2050

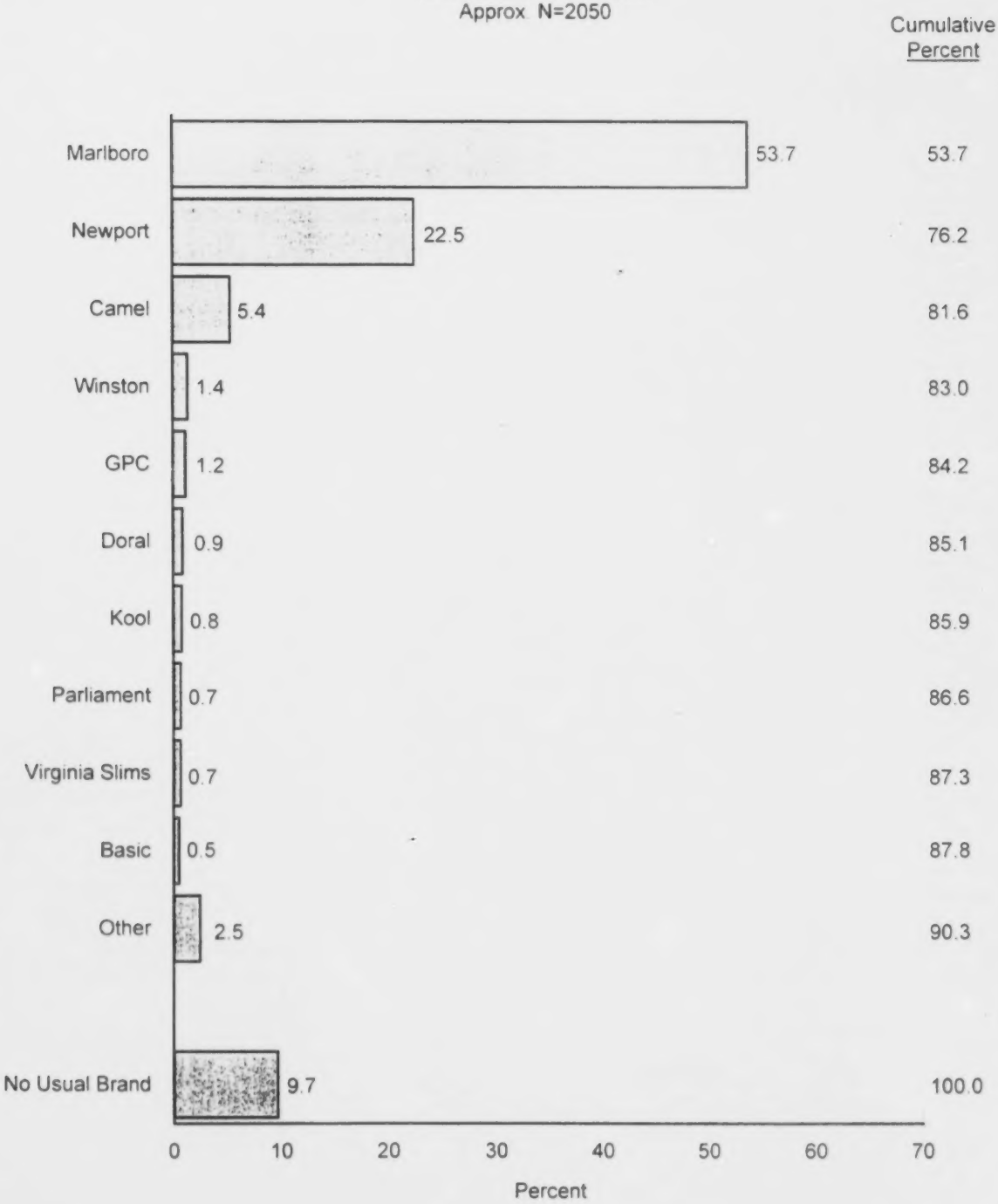

Figure 2

Grade 10: Brands Usually Smoked by Current Smokers, 1998

(entries are percentages)
Approx. N=2710

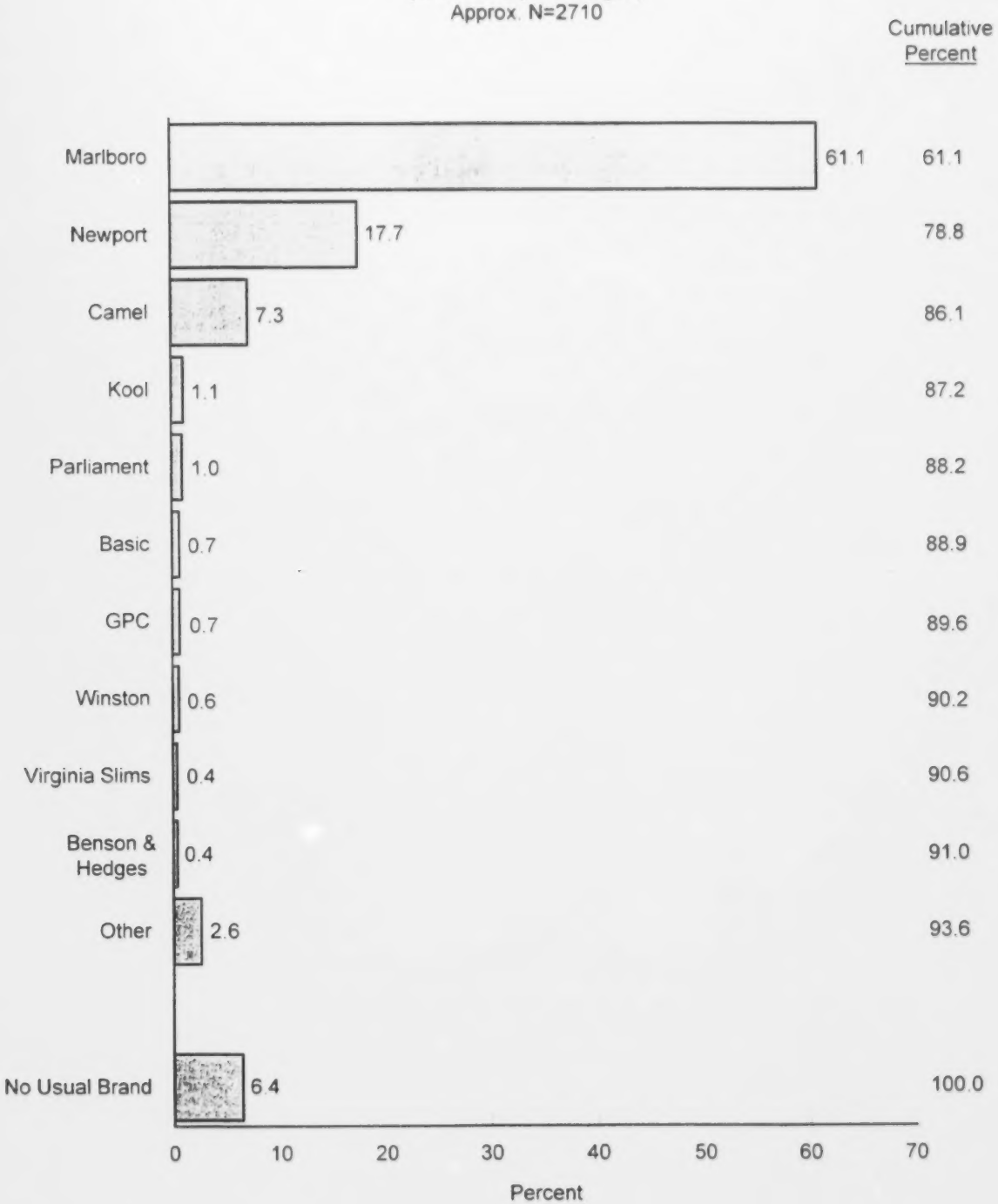

Figure 3

Grade 12: Brands Usually Smoked by Current Smokers, 1998

(entries are percentages)
Approx. N=2340

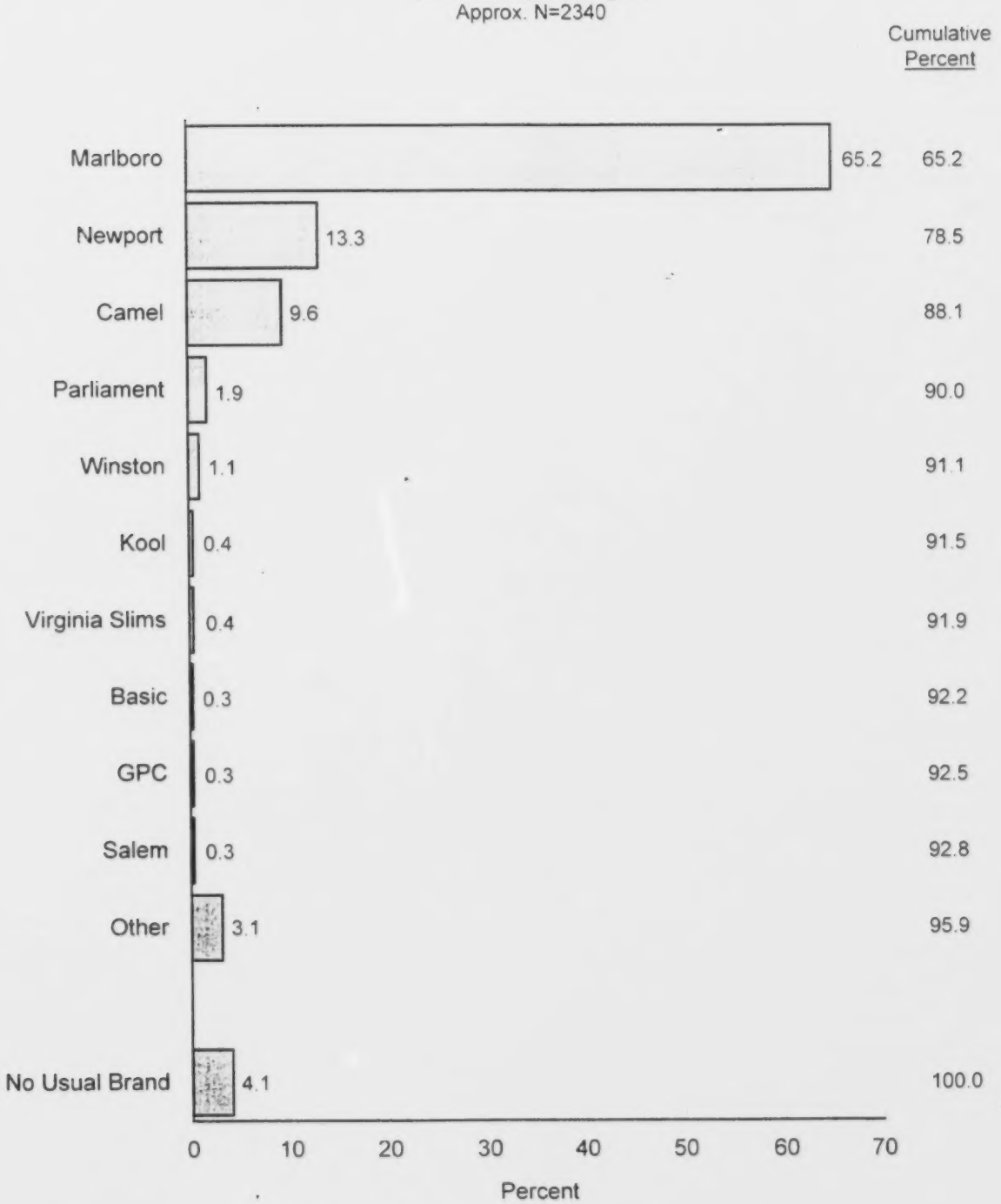

TABLE 1

Long-Term Trends in Prevalence of Cigarettes for Eighth, Tenth, and Twelfth Graders

(entries are percentages)

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	'97–'98 change
Lifetime																									
8th Grade																	44.0	45.2	45.3	46.1	46.4	49.2	47.3	45.7	-1.6
10th Grade																	55.1	53.5	56.3	56.9	57.6	61.2	60.2	57.7	-2.5s
12th Grade	73.6	75.4	75.7	75.3	74.0	71.0	71.0	70.1	70.6	69.7	68.8	67.6	67.2	66.4	65.7	64.4	63.1	61.8	61.9	62.0	64.2	63.5	65.4	65.3	-0.1
Thirty-Day																									
8th Grade																	14.3	15.5	16.7	18.6	19.1	21.0	19.4	19.1	-0.3
10th Grade																	20.8	21.5	24.7	25.4	27.9	30.4	29.8	27.6	-2.2s
12th Grade	36.7	38.8	38.4	36.7	34.4	30.5	29.4	30.0	30.3	29.3	30.1	29.6	29.4	28.7	28.6	29.4	28.3	27.8	29.9	31.2	33.5	34.0	36.5	35.1	-1.4
Daily																									
8th Grade																	7.2	7.0	8.3	8.8	9.3	10.4	9.0	8.8	-0.2
10th Grade																	12.6	12.3	14.2	14.6	16.3	18.3	18.0	15.8	-2.2ss
12th Grade	26.9	28.8	28.8	27.5	25.4	21.3	20.3	21.1	21.2	18.7	19.5	18.7	18.7	18.1	18.9	19.1	18.5	17.2	19.0	19.4	21.6	22.2	24.6	22.4	-2.2s
1/2 pack+ per day																									
8th Grade																	3.1	2.9	3.5	3.6	3.4	4.3	3.5	3.6	+0.1
10th Grade																	6.5	6.0	7.0	7.6	8.3	9.4	8.6	7.9	-0.7
12th Grade	17.9	19.2	19.4	18.8	16.5	14.3	13.5	14.2	13.8	12.3	12.5	11.4	11.4	10.6	11.2	11.3	10.7	10.0	10.9	11.2	12.4	13.0	14.3	12.6	-1.7s
Approx. Ns																									
8th Grade																	*17500*	*18600*	*18300*	*17300*	*17500*	*17800*	*18600*	*18100*	
10th Grade																	*14800*	*14800*	*15300*	*15800*	*17000*	*15600*	*15500*	*15000*	
12th Grade	*9400*	*15400*	*17100*	*17800*	*15500*	*15900*	*17500*	*17700*	*16300*	*15900*	*16000*	*15200*	*16300*	*16300*	*16700*	*15200*	*15000*	*15800*	*16300*	*15400*	*15400*	*14300*	*15400*	*15200*	

NOTE: Level of significance of difference between the two years indicated: s = .05, ss = .01, sss = .001.
SOURCE: The Monitoring the Future Study, The University of Michigan.

Table 2
1998 Cigarette Brand Preference
for Past Thirty-Day Smokers
(entries are percentages)

	8th grade	10th grade	12th grade	all grades*
form(s):	1/3/4	1/3/4	1/3/6	
Marlboro	53.7	61.1	65.2	60.0
Newport	22.5	17.7	13.3	17.8
Camel	5.4	7.3	9.6	7.4
Parliament	0.7	1.0	1.9	1.2
Winston	1.4	0.6	1.1	1.0
Kool	0.8	1.1	0.4	0.8
GPC	1.2	0.7	0.3	0.7
Basic	0.5	0.7	0.3	0.5
Virginia Slims	0.7	0.4	0.4	0.5
Doral	0.9	0.3	0.2	0.5
Benson & Hedges	0.3	0.4	0.2	0.3
Salem	0.2	0.3	0.3	0.3
Merit	0.4	0.1	0.0	0.2
Misty	0.3	0.1	0.1	0.2
Capri	0.0	0.2	0.2	0.1
Pall Mall	0.1	0.1	0.1	0.1
Cambridge	0.1	0.1	0.1	0.1
Black & Whites	0.1	0.1	0.1	0.1
Kent	0.1	0.1	0.0	0.1
Vantage	0.0	0.1	0.0	0.0
Monarch	0.0	0.0	0.1	0.0
Carlton	0.0	0.0	0.0	0.0
More	0.0	0.0	0.0	0.0
Other	1.2	1.3	2.2	1.6
No usual brand	9.7	6.4	4.1	6.7
N=	2048	2708	2335	

* Average value across the three grades, each weighted equally.

Table 3

1998 Cigarette Brand Preference by Smoking Frequency for Past Thirty-Day Smokers

(entries are percentages)

form(s):	8th grade 1/3/4			10th grade 1/3/4			12th grade 1/3/6			all grades*		
	<1/day	1-5/day	1/2 pk+/day	<1/day	1-5/day	1/2 pk+/day	<1/day	1-5/day	1/2 pk+/day	<1/day	1-5/day	1/2 pk+/day
Marlboro	48.2	58.2	63.6	57.6	64.8	62.6	61.4	65.1	69.0	55.7	62.7	65.1
Newport	19.6	26.6	25.0	13.8	19.9	21.3	11.9	13.7	14.2	15.1	20.1	20.2
Camel	6.0	5.0	4.2	6.2	6.6	9.6	7.5	12.5	9.1	6.6	8.0	7.6
Parliament	0.5	1.1	0.8	0.8	1.4	0.9	1.8	2.7	1.3	1.0	1.7	1.0
Winston	1.3	1.9	0.7	0.5	0.8	0.5	0.7	0.8	1.6	0.8	1.2	0.9
Kool	1.2	0.2	0.5	1.6	0.9	0.6	0.3	0.7	0.2	1.0	0.6	0.4
GPC	1.5	0.3	1.5	1.0	0.3	0.5	0.1	0.0	0.8	0.9	0.2	0.9
Basic	0.9	0.2	0.0	0.9	0.2	1.1	0.3	0.0	0.7	0.7	0.1	0.6
Virginia Slims	1.2	0.1	0.0	0.6	0.1	0.3	0.4	0.3	0.3	0.7	0.2	0.2
Doral	1.3	0.6	0.3	0.0	0.6	0.5	0.4	0.1	0.3	0.6	0.4	0.4
Benson & Hedges	0.5	0.2	0.2	0.6	0.4	0.2	0.2	0.3	0.1	0.4	0.3	0.2
Salem	0.2	0.1	0.0	0.5	0.4	0.0	0.7	0.3	0.0	0.5	0.3	0.0
Merit	0.5	0.5	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.0
Misty	0.3	0.5	0.0	0.2	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.1
Capri	0.0	0.0	0.0	0.1	0.4	0.0	0.3	0.2	0.0	0.1	0.2	0.0
Pall Mall	0.0	0.0	0.3	0.0	0.2	0.0	0.1	0.0	0.2	0.0	0.1	0.2
Cambridge	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.1
Black & Whites	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.1
Kent	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Vantage	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Monarch	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0
Carlton	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
More	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	1.9	0.5	0.2	1.8	1.2	0.8	3.7	2.0	1.0	2.5	1.2	0.7
No usual brand	14.9	3.8	2.5	13.0	1.9	1.2	10.1	1.3	0.7	12.7	2.3	1.5
N=	1125	545	378	1148	784	776	809	690	837			

* Average value across the three grades, each weighted equally.

Table 4

1998 Cigarette Brand Preference by Self-Purchase* for Past Thirty-Day Smokers

(entries are percentages)

	8th grade forms 3 & 4		10th grade forms 3 & 4		12th grade form 6		all grades**	
	No	Yes	No	Yes	No	Yes	No	Yes
Marlboro	53.4	54.5	62.7	60.8	59.9	68.9	58.7	61.4
Newport	17.3	28.9	11.6	24.9	11.4	12.5	13.4	22.1
Camel	6.3	4.0	7.6	6.5	7.3	9.3	7.1	6.6
Parliament	0.3	1.0	1.0	0.4	2.2	1.1	1.2	0.8
Winston	2.2	0.2	0.8	0.2	1.3	1.4	1.4	0.6
Kool	1.3	0.3	1.5	1.2	0.0	0.5	0.9	0.7
GPC	1.4	1.1	0.7	0.2	1.2	0.7	1.1	0.7
Basic	0.8	0.0	0.7	0.6	0.0	0.5	0.5	0.4
Virginia Slims	0.7	2.0	0.4	0.4	1.3	0.2	0.8	0.9
Doral	1.0	0.5	0.1	0.8	0.0	0.1	0.4	0.5
Benson & Hedges	0.3	0.3	0.4	0.5	0.5	0.0	0.4	0.3
Salem	0.0	0.2	0.3	0.1	0.3	0.1	0.2	0.1
Merit	0.7	0.3	0.0	0.0	0.0	0.0	0.2	0.1
Misty	0.6	0.0	0.2	0.0	0.0	0.2	0.3	0.1
Capri	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
Pall Mall	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0
Cambridge	0.0	0.0	0.2	0.0	0.8	0.0	0.3	0.0
Black & Whites	0.0	0.3	0.0	0.1	0.0	0.0	0.0	0.1
Kent	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.1
Vantage	0.0	0.0	0.3	0.0	0.0	0.0	0.1	0.0
Monarch	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.1
Carlton	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
More	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	1.7	0.7	1.6	0.7	1.1	2.7	1.5	1.4
No usual brand	11.8	5.7	9.7	2.4	12.8	1.6	11.4	3.2
N=	**669**	**359**	**739**	**582**	**211**	**626**		

* Answered that they had bought cigarettes at least once in the past 30 days by at least one of the following methods: from a vending machine, through the mail, picked them up at a store, or was handed them in a store by a clerk.

** Average value across the three grades, each weighted equally.

Table 5

1998 Cigarette Brand Preference by Grade of Smoking First Cigarette for Past Thirty-Day Smokers

(entries are percentages)

	10th grade forms 1/3/4		12th grade forms 1/3/6		
Grade 1st used:	by 8th	in 9th/10th	by 8th	in 9th/10th	in 11th/12th
Marlboro	62.4	62.7	66.5	66.2	65.4
Newport	16.8	14.7	12.2	11.9	10.4
Camel	7.6	5.9	10.5	9.2	9.2
Parliament	1.1	0.8	1.8	2.3	1.0
Winston	0.6	0.8	1.3	0.7	1.1
Kool	0.9	1.9	0.4	0.2	0.6
GPC	0.6	1.0	0.2	0.7	0.0
Basic	0.7	0.5	0.4	0.3	0.0
Virginia Slims	0.4	0.4	0.4	0.2	0.3
Doral	0.3	0.0	0.3	0.1	0.7
Benson & Hedges	0.4	0.0	0.2	0.2	0.0
Salem	0.4	0.2	0.3	0.3	0.5
Merit	0.0	0.6	0.0	0.0	0.0
Misty	0.1	0.0	0.0	0.2	0.0
Capri	0.2	0.0	0.2	0.1	0.0
Pall Mall	0.0	0.3	0.2	0.0	0.0
Cambridge	0.1	0.0	0.1	0.0	0.0
Black & Whites	0.1	0.0	0.0	0.0	0.0
Kent	0.1	0.0	0.0	0.0	0.0
Vantage	0.1	0.0	0.0	0.0	0.0
Monarch	0.0	0.0	0.2	0.0	0.0
Carlton	0.0	0.2	0.0	0.0	0.0
More	0.0	0.0	0.0	0.0	0.0
Other	1.4	0.7	1.6	2.7	3.4
No usual brand	5.8	9.4	3.2	4.9	7.3
N=	2110	414	1163	627	214

Table 6
1998 Cigarette Brand Preference by Gender for Past Thirty-Day Smokers

(entries are percentages)

form(s):	8th grade 1/3/4		10th grade 1/3/4		12th grade 1/3/6		all grades*	
	male	female	male	female	male	female	male	female
Marlboro	51.7	55.4	58.0	64.1	64.6	66.2	58.1	61.9
Newport	21.0	23.0	15.6	19.1	12.1	13.7	16.2	18.6
Camel	7.3	4.2	9.9	5.0	11.2	8.3	9.5	5.8
Parliament	0.8	0.7	0.9	1.1	0.9	3.0	0.9	1.6
Winston	1.5	1.3	0.8	0.4	1.5	0.6	1.3	0.8
Kool	0.8	0.7	1.2	1.1	0.2	0.5	0.7	0.8
GPC	1.6	0.5	1.1	0.4	0.2	0.4	1.0	0.4
Basic	0.6	0.6	0.8	0.6	0.2	0.5	0.5	0.6
Virginia Slims	0.3	1.0	0.3	0.4	0.1	0.6	0.2	0.7
Doral	0.8	1.1	0.2	0.4	0.2	0.3	0.4	0.6
Benson & Hedges	0.4	0.3	0.3	0.5	0.0	0.4	0.2	0.4
Salem	0.2	0.1	0.5	0.2	0.5	0.1	0.4	0.1
Merit	0	0.4	0.1	0.1	0.0	0.0	0.2	0.2
Misty	0.3	0.3	0.0	0.2	0.0	0.1	0.1	0.2
Capri	0.0	0.0	0.0	0.3	0.0	0.3	0.0	0.2
Pall Mall	0.1	0.0	0.1	0.0	0.0	0.1	0.1	0.0
Cambridge	0.0	0.1	0.0	0.1	0.0	0.2	0.0	0.1
Black & Whites	0.2	0.0	0.1	0.0	0.0	0.0	0.1	0.0
Kent	0.1	0.0	0.2	0.0	0.0	0.0	0.1	0.0
Vantage	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Monarch	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.0
Carlton	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
More	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	1.8	0.8	1.8	1.0	2.6	1.9	2.1	1.2
No usual brand	9.9	9.6	8.1	5.0	5.5	2.8	7.8	5.8
N=	863	1092	1209	1460	1118	1087		

* Average value across the three grades, each weighted equally.

Table 7

1998 Cigarette Brand Preference by Race/Ethnicity for Past Thirty-Day Smokers

(entries are percentages)

form(s):	8th grade 1/3/4			10th grade 1/3/4			12th grade 1/3/6			all grades*		
	black	white	Hispanic	black	white	Hispanic	black	white	Hispanic	black	white	Hispanic
Marlboro	9.0	61.1	56.7	9.7	66.1	64.9	5.2	70.2	57.7	8.0	65.8	59.8
Newport	71.1	14.8	22.0	70.7	12.7	15.9	82.3	7.6	23.0	74.7	11.7	20.3
Camel	1.7	6.3	4.1	0.0	8.3	0.4	0.0	10.9	3.4	0.6	8.5	2.6
Parliament	0.0	0.8	0.7	0.0	1.2	0.3	0.0	2.0	0.6	0.0	1.3	0.5
Winston	1.5	1.4	0.7	0.0	0.7	0.6	0.0	1.3	0.0	0.5	1.1	0.4
Kool	1.4	0.7	0.4	5.3	0.6	3.6	1.5	0.2	1.2	2.7	0.5	1.7
GPC	0.5	0.9	0.8	0.0	0.6	1.8	0.0	0.4	0.4	0.2	0.6	1.0
Basic	0.0	0.8	0.4	0.0	0.8	0.3	0.0	0.4	0.5	0.0	0.7	0.4
Virginia Slims	0.4	0.5	1.4	0.2	0.3	0.6	0.0	0.3	0.2	0.2	0.4	0.7
Doral	1.4	0.9	1.5	0.0	0.4	0.0	0.5	0.2	1.0	0.6	0.5	0.8
Benson & Hedges	1.0	0.1	0.4	5.0	0.0	0.5	0.0	0.1	0.6	2.0	0.1	0.5
Salem	0.0	0.2	0.0	0.4	0.4	0.5	0.0	0.3	0.4	0.1	0.3	0.3
Merit	0.0	0.6	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.0
Misty	0.9	0.2	0.0	0.0	0.1	0.4	0.0	0.1	0.0	0.3	0.1	0.1
Capri	0.0	0.0	0.0	0.0	0.1	0.5	1.5	0.1	0.4	0.5	0.1	0.3
Pall Mall	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Cambridge	0.0	0.0	0.4	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.1
Black & Whites	0.7	0.0	0.3	0.2	0.0	0.2	0.0	0.0	0.0	0.3	0.0	0.2
Kent	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vantage	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.3
Monarch	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Carlton	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
More	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	3.7	0.5	0.9	3.1	1.1	0.8	3.5	1.9	2.7	3.4	1.2	1.5
No usual brand	6.8	10.3	9.4	5.4	6.3	7.8	5.4	4.0	7.9	5.9	6.9	8.4
N=	166	1319	257	178	2029	245	106	1818	156			

* Average value across the three grades, each weighted equally.

Table 8

1998 Cigarette Brand Preference by Region*
for Past Thirty-Day Smokers

(entries are percentages)

form(s):	8th grade 1/3/4				10th grade 1/3/4				12th grade 1/3/6				all grades**			
	NE	NC	S	W	NE	NC	S	W	NE	NC	S	W	NE	NC	S	W
Marlboro	39.9	50.9	58.4	58.0	47.2	66.9	62.7	68.3	54.1	72.7	68.6	56.9	47.1	63.5	63.2	61.1
Newport	32.2	24.8	22.5	10.1	30.9	13.1	18.0	4.8	21.7	9.1	15.5	5.9	28.3	15.7	18.7	6.9
Camel	4.0	6.8	3.3	9.5	7.4	10.7	5.4	6.2	8.3	8.3	7.6	17.9	6.6	8.6	5.4	11.2
Parliament	3.0	0.4	0.4	0.0	4.3	0.0	0.0	0.2	7.3	0.9	0.4	0.7	4.9	0.4	0.3	0.3
Winston	1.4	1.9	1.5	0.0	0.4	0.2	0.9	0.5	0.7	1.6	0.7	1.4	0.8	1.2	1.0	0.6
Kool	0.8	0.8	0.3	2.0	0.4	0.4	1.6	2.5	0.0	0.4	0.3	0.8	0.4	0.5	0.7	1.8
GPC	2.0	0.8	0.8	2.1	0.4	0.9	0.6	1.0	0.0	0.8	0.0	0.4	0.8	0.8	0.5	1.2
Basic	0.4	0.4	0.5	1.0	0.4	0.7	0.9	0.8	0.0	0.6	0.2	0.6	0.3	0.6	0.5	0.8
Virginia Slims	0.4	0.2	1.1	0.6	0.4	0.2	0.3	0.7	0.7	0.2	0.4	0.2	0.5	0.2	0.6	0.5
Doral	0.0	1.0	1.4	0.4	0.5	0.3	0.3	0.0	0.0	0.4	0.3	0.0	0.2	0.6	0.7	0.1
Benson & Hedges	0.0	0.3	0.2	1.0	0.1	0.2	0.3	1.6	0.4	0.0	0.3	0.1	0.2	0.2	0.3	0.9
Salem	0.0	0.2	0.3	0.0	0.2	0.2	0.2	1.0	0.9	0.1	0.2	0.4	0.4	0.2	0.2	0.5
Merit	0.8	0.3	0.3	0.6	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2	0.1	0.2
Misty	0.8	0.0	0.4	0.0	0.0	0.2	0.0	0.3	0.3	0.0	0.0	0.0	0.4	0.1	0.1	0.1
Capri	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.2	0.0	0.0	0.2	0.6	0.0	0.0	0.2	0.3
Pall Mall	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.0	0.1	0.0	0.1	0.1	0.0	0.1
Cambridge	0.0	0.0	0.0	0.3	0.0	0.0	0.2	0.0	0.0	0.3	0.0	0.0	0.0	0.1	0.1	0.1
Black & Whites	0.0	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.2	0.0
Kent	0.0	0.0	0.0	0.3	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Vantage	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Monarch	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.1	0.0
Carlton	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
More	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	1.3	0.7	1.6	1.0	1.4	0.9	1.4	1.7	2.0	1.5	1.7	5.0	1.6	1.0	1.6	2.6
No usual brand	13.2	10.4	6.7	12.9	5.9	4.5	6.6	10.0	3.2	3.1	3.3	9.2	7.4	6.0	5.5	10.7
N=	284	577	851	336	600	688	1028	392	433	677	855	370				

* Census regions: NE = Northeast, NC = North Central, S = South, W = West.

** Average value across the three grades, each weighted equally.

Table 9

1998 Cigarette Brand Preference by Population Density* for Past Thirty-Day Smokers

(entries are percentages)

form(s):	8th grade 1/3/4			10th grade 1/3/4			12th grade 1/3/6			all grades**		
	Lg MSA	Other MSA	Non-MSA	Lg MSA	Other MSA	Non-MSA	Lg MSA	Other MSA	Non-MSA	Lg MSA	Other MSA	Non-MSA
Marlboro	43.2	50.7	65.2	53.8	57.4	71.5	58.6	67.2	68.8	51.9	58.4	68.5
Newport	30.8	24.8	13.5	27.1	18.8	9.4	16.2	11.7	13.1	24.7	18.4	12.0
Camel	6.6	5.0	5.0	5.5	7.8	8.0	9.7	11.1	6.7	7.3	8.0	6.6
Parliament	1.5	0.6	0.3	1.2	1.5	0.1	4.4	1.1	0.5	2.4	1.1	0.3
Winston	1.4	1.1	1.7	0.8	0.4	0.6	1.2	0.6	1.8	1.1	0.7	1.4
Kool	0.4	1.6	0.1	0.9	1.8	0.4	0.8	0.2	0.2	0.7	1.2	0.2
GPC	0.8	1.1	1.6	0.1	0.9	0.8	0.0	0.1	1.0	0.3	0.7	1.1
Basic	0.4	0.1	1.2	0.2	0.5	1.5	0.5	0.3	0.1	0.4	0.3	0.9
Virginia Slims	0.4	1.0	0.3	0.3	0.3	0.5	0.5	0.4	0.2	0.4	0.6	0.3
Doral	0.4	0.7	1.6	0.1	0.4	0.4	0.7	0.1	0.0	0.4	0.4	0.7
Benson & Hedges	0.6	0.4	0.0	1.0	0.4	0.0	0.3	0.2	0.1	0.6	0.3	0.0
Salem	0.0	0.2	0.2	0.8	0.2	0.2	0.2	0.5	0.2	0.3	0.3	0.2
Merit	0.2	0.6	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.1
Misty	0.3	0.5	0.0	0.0	0.2	0.0	0.0	0.0	0.2	0.1	0.2	0.1
Capri	0.0	0.0	0.0	0.3	0.2	0.0	0.3	0.1	0.1	0.2	0.1	0.0
Pall Mall	0.3	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.0	0.1	0.1	0.1
Cambridge	0.2	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.0	0.1	0.1	0.1
Black & Whites	0.2	0.0	0.2	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.1
Kent	0.0	0.1	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Vantage	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Monarch	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.0
Carlton	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
More	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	1.2	1.1	1.3	1.3	2.2	0.2	2.1	1.8	3.1	1.5	1.7	1.5
No usual brand	11.3	10.3	7.7	5.6	7.0	6.1	4.3	4.2	3.9	7.1	7.2	5.9
N=	483	892	673	636	1197	876	642	1091	603			

* Census categories: Lg MSA = the 18 largest Standard Metropolitan Statistical Areas, Other MSA = all other Metropolitan Statistical Areas, Non-MSA = areas not designated as Metropolitan Statistical Areas.

** Average value across the three grades, each weighted equally.

Table 10
1998 Cigarette Brand Preference by Four-Year College Plans*
for Past Thirty-Day Smokers

(entries are percentages)

	8th grade		10th grade		12th grade		all grades**	
form(s):	1/3/4		1/3/4		1/3/6			
	No	Yes	No	Yes	No	Yes	No	Yes
Marlboro	57.4	52.9	61.5	61.4	68.5	64.6	62.5	59.6
Newport	22.4	21.5	20.6	16.4	13.2	12.3	18.7	16.7
Camel	3.4	6.2	7.9	7.1	8.3	10.5	6.5	7.9
Parliament	1.0	0.7	0.0	1.3	0.3	2.6	0.4	1.5
Winston	1.0	1.5	0.5	0.6	1.0	1.1	0.8	1.1
Kool	1.1	0.8	1.6	1.0	0.4	0.4	1.0	0.7
GPC	1.2	1.1	0.6	0.7	1.0	0.1	0.9	0.6
Basic	1.0	0.4	0.8	0.7	0.7	0.2	0.8	0.4
Virginia Slims	0.3	0.8	0.3	0.4	0.1	0.5	0.2	0.6
Doral	0.3	1.1	0.3	0.3	0.4	0.2	0.3	0.5
Benson & Hedges	0.2	0.4	0.4	0.4	0.1	0.2	0.2	0.3
Salem	0.2	0.1	0.2	0.4	0.2	0.3	0.2	0.3
Merit	0.3	0.5	0.0	0.1	0.0	0.0	0.1	0.2
Misty	0.2	0.3	0.0	0.1	0.0	0.0	0.1	0.1
Capri	0.0	0.0	0.2	0.1	0.0	0.2	0.1	0.1
Pall Mall	0.0	0.1	0.0	0.1	0.3	0.0	0.1	0.1
Cambridge	0.0	0.1	0.0	0.1	0.3	0.0	0.1	0.1
Black & Whites	0.5	0.0	0.1	0.1	0.0	0.0	0.2	0.0
Kent	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.1
Vantage	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Monarch	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Carlton	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
More	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	1.0	1.3	1.3	1.2	2.3	2.3	1.5	1.6
No usual brand	8.6	10.1	3.9	7.3	3.1	4.4	5.2	7.3
N=	**409**	**1538**	**653**	**2003**	**641**	**1474**		

* "Yes" indicates that the respondent expects to complete four years of college.

** Average value across the three grades, each weighted equally.

Table 11

1998 Cigarette Brand Preference by Parental Education* for Past Thirty-Day Smokers

(entries are percentages)

	8th grade			10th grade			12th grade			all grades**		
form(s):	1/3/4			1/3/4			1/3/6					
	1-3 lo	3.5-4	4.5-6 hi	1-3 lo	3.5-4	4.5-6 hi	1-3 lo	3.5-4	4.5-6 hi	1-3 lo	3.5-4	4.5-6 hi
Marlboro	56.7	52.5	53.1	63.1	63.4	56.7	69.0	67.8	60.4	62.9	61.2	56.7
Newport	24.4	22.4	18.1	18.6	15.8	17.2	16.3	10.8	10.2	19.8	16.3	15.2
Camel	3.8	4.1	9.6	4.3	8.5	10.1	5.0	8.9	15.4	4.4	7.2	11.7
Parliament	0.6	0.7	1.1	0.3	0.4	2.5	1.3	1.4	3.1	0.7	0.8	2.2
Winston	0.7	1.1	2.2	0.6	0.4	0.7	0.7	1.1	1.4	0.7	0.9	1.4
Kool	0.6	0.0	1.5	1.2	0.8	1.4	0.6	0.4	0.0	0.8	0.4	1.0
GPC	1.5	1.2	0.6	1.6	0.0	0.2	0.1	0.9	0.0	1.1	0.7	0.3
Basic	1.5	0.0	0.1	0.8	0.3	0.9	0.4	0.5	0.2	0.9	0.3	0.4
Virginia Slims	0.1	0.3	1.7	0.4	0.4	0.3	0.2	0.6	0.3	0.2	0.4	0.8
Doral	1.1	0.8	0.7	0.7	0.0	0.1	0.3	0.4	0.1	0.7	0.4	0.3
Benson & Hedges	0.1	0.6	0.5	0.3	0.7	0.4	0.2	0.1	0.2	0.2	0.5	0.4
Salem	0.2	0.1	0.2	0.6	0.2	0.2	0.2	0.5	0.3	0.3	0.3	0.2
Merit	0.4	0.2	0.4	0.0	0.2	0.1	0.0	0.0	0.0	0.1	0.1	0.2
Misty	0.0	0.8	0.0	0.1	0.0	0.2	0.0	0.0	0.2	0.0	0.3	0.1
Capri	0.0	0.0	0.0	0.4	0.1	0.0	0.4	0.1	0.0	0.3	0.1	0.0
Pall Mall	0.0	0.0	0.2	0.0	0.0	0.2	0.2	0.0	0.1	0.1	0.0	0.2
Cambridge	0.0	0.2	0.0	0.0	0.2	0.0	0.0	0.3	0.0	0.0	0.2	0.0
Black & Whites	0.1	0.0	0.2	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
Kent	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.1
Vantage	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Monarch	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1
Carlton	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
More	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	1.5	1.6	0.8	1.4	0.9	1.6	1.9	2.2	2.7	1.6	1.6	1.7
No usual brand	7.0	13.3	8.9	5.5	7.4	6.9	3.2	4.0	5.3	5.2	8.2	7.0
N=	743	539	590	1047	687	864	766	660	761			

* Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables.

** Average value across the three grades, each weighted equally.

APPENDIX A: TEXT OF QUESTIONS

Appendix A

Monitoring the Future Cigarette Question Text

Question on lifetime smoking:

1. Have you ever smoked cigarettes?

① Never—**GO TO QUESTION 13**
② Once or twice
③ Occasionally but not regularly
④ Regularly in the past
⑤ Regularly now

Question on 30-day smoking:

2. How frequently have you smoked cigarettes during the past 30 days?

① Not at all—**GO TO QUESTION 6**
② Less than one cigarette per day
③ One to five cigarettes per day
④ About one-half pack per day
⑤ About one pack per day
⑥ About one and one-half packs per day
⑦ Two packs or more per day

Question on cigarette brand preference:

5. What brand of cigarettes do you usually smoke?
(Brands are in alphabetical order. Mark only one.)

○ Basic	○ Kent	○ Parliament
○ Benson & Hedges	○ Kool	○ Salem
○ Black & Whites	○ Marlboro	○ Vantage
○ Cambridge	○ Merit	○ Virginia Slims
○ Camel	○ Misty	○ Winston
○ Capri	○ Monarch	
○ Carlton	○ More	○ Other
○ Doral	○ Newport	○ No usual brand
○ GPC	○ Pall Mall	

Questions on how cigarettes were purchased:

3. During the last 30 days, about how many times (if any) have you bought cigarettes...
(Mark one circle for each line.)

	None	1 Time	2 Times	3-5 Times	6-9 Times	10 or More
b. ...on your own from vending machines?	○	○	○	○	○	○
c. ...through the mail?	○	○	○	○	○	○
d. ...in a store where you pick up the pack (or carton) and bring it to the check-out counter?	○	○	○	○	○	○
e. ...in a store where the clerk has to hand you the pack or carton?	○	○	○	○	○	○

APPENDIX B: CONFIDENCE INTERVALS AND SELECTED SIGNIFICANCE TESTS FOR THREE CIGARETTE BRANDS

Table B-1

Cigarette Brand Preferences

Marlboro use at 8th Grade, 1998

	N	95% Confidence Interval* Lower limit	**Observed estimate**	Upper limit	Significance tests* p-value	signif **	Test
Total	*2048*	48.0	**53.6**	59.0			
Gender:							
Male	*863*	46.4	**51.7**	57.1	0.4010		(t-test)
Female	*1092*	48.8	**55.4**	61.8			
College Plans:							
None or under 4 Yrs.	*409*	49.7	**57.4**	64.7	0.3072		(t-test)
Complete 4 Yrs.	*1538*	47.5	**52.9**	58.2			
Region:							
Northeast	*284*	25.9	**39.9**	55.8	0.2118		(ANOVA)
North Central	*577*	40.6	**50.9**	61.2			
South	*851*	49.6	**58.4**	66.7			
West	*336*	47.1	**58.0**	68.2			
Population Density:							
Large MSA	*483*	33.9	**43.1**	52.9	0.0011	ss	(ANOVA)
Other MSA	*892*	41.5	**50.7**	59.9			
Non-MSA	*673*	57.6	**65.2**	72.0			
Parental Education:							
1.0-2.0 (Low)	*205*	48.8	**58.4**	67.4	0.5687		(ANOVA)
2.5-3.0	*538*	47.8	**56.0**	63.9			
3.5-4.0	*539*	45.1	**52.5**	59.9			
4.5-5.0	*392*	49.0	**55.2**	61.3			
5.5-5.0 (High)	*199*	40.9	**49.0**	57.2			
Race (1-Year average):							
White	*1319*	56.5	**61.1**	65.5			(t-test)
Black	*166*	4.4	**8.9**	17.3	0.0001	sss	vs. White
Hispanic	*257*	45.9	**56.7**	66.9	0.4592		vs. White

* Confidence intervals and Significance tests incorporate clustered sampling design.
t-test tests the difference between the prevalences of two sub-categories.
ANOVA tests the hypothesis that the prevalences of all sub-categories are the same.

**level of significance: s=.05, ss=.01, sss=.001

Table B-2

Marlboro use at 10th Grade, 1998

	N	95% Confidence Interval* Lower limit	**Observed estimate**	Upper limit	Significance tests* p-value	signif **	Test
Total	*2708*	56.8	**61.1**	65.2			
Gender:							
Male	*1209*	53.7	**58.0**	62.2	0.0818		(t-test)
Female	*1460*	58.6	**64.1**	69.3			
College Plans:							
None or under 4 Yrs.	*653*	55.9	**61.5**	66.7	0.9760		(t-test)
Complete 4 Yrs.	*2003*	56.7	**61.4**	65.8			
Region:							
Northeast	*600*	37.2	**47.2**	57.4	0.0025	ss	(ANOVA)
North Central	*688*	61.1	**66.9**	72.2			
South	*1028*	55.4	**62.7**	69.4			
West	*392*	62.5	**68.3**	73.5			
Population Density:							
Large MSA	*636*	44.4	**53.8**	62.9	0.0011	ss	(ANOVA)
Other MSA	*1197*	50.2	**57.4**	64.3			
Non-MSA	*876*	65.4	**71.5**	76.9			
Parental Education:							
1.0-2.0 (Low)	*244*	55.8	**62.3**	68.5	0.3522		(ANOVA)
2.5-3.0	*803*	57.8	**63.4**	68.7			
3.5-4.0	*687*	58.4	**63.4**	68.1			
4.5-5.0	*593*	50.5	**56.8**	62.9			
5.5-5.0 (High)	*271*	46.6	**56.4**	65.8			
Race (1-Year average):							
White	*2029*	62.3	**66.1**	69.7			(t-test)
Black	*178*	5.4	**9.7**	16.8	0.0001	sss	vs. White
Hispanic	*245*	56.8	**64.9**	72.3	0.7794		vs. White

* Confidence intervals and Significance tests incorporate clustered sampling design.
t-test tests the difference between the prevalences of two sub-categories.
ANOVA tests the hypothesis that the prevalences of all sub-categories are the same.

**level of significance: s=.05, ss=.01, sss=.001

Table B-3 *Cigarette Brand Preferences*

Marlboro use at 12th Grade, 1998

	N	95% Confidence Interval* Lower limit	**Observed estimate**	Upper limit	Significance tests* p-value	signif.**	Test
Total	*2334*	61.4	**65.3**	68.9			
Gender:							
Male	*1118*	60.1	**64.6**	68.8	0.6100		(t-test)
Female	*1086*	61.6	**66.3**	70.6			
College Plans:							
None or under 4 Yrs.	*642*	63.0	**68.5**	73.4	0.2584		(t-test)
Complete 4 Yrs.	*1472*	60.6	**64.6**	68.5			
Region:							
Northeast	*432*	41.7	**54.2**	66.2	0.0012	ss	(ANOVA)
North Central	*677*	67.6	**72.7**	77.3			
South	*855*	63.3	**68.6**	73.4			
West	*370*	48.5	**56.9**	64.9			
Population Density:							
Large MSA	*641*	49.3	**58.5**	67.2	0.1816		(ANOVA)
Other MSA	*1089*	62.3	**67.3**	71.9			
Non-MSA	*603*	59.7	**68.8**	76.7			
Parental Education:							
1.0-2.0 (Low)	*170*	54.2	**63.2**	71.4	0.014	s	(ANOVA)
2.5-3.0	*596*	65.4	**70.7**	75.4			
3.5-4.0	*659*	63.8	**67.9**	71.8			
4.5-5.0	*487*	58.5	**63.8**	68.8			
5.5-5.0 (High)	*273*	45.6	**54.3**	62.8			
Race (1-Year average):							
White	*1816*	66.7	**70.3**	73.6			(t-test)
Black	*106*	2.0	**5.2**	12.9	0.0001	sss	vs. White
Hispanic	*156*	45.7	**57.7**	68.8	0.0340	s	vs. White

* Confidence intervals and Significance tests incorporate clustered sampling design.
t-test tests the difference between the prevalences of two sub-categories.
ANOVA tests the hypothesis that the prevalences of all sub-categories are the same.

**level of significance: s=.05, ss=.01, sss=.001

Table B-4

Newport use at 8th Grade, 1998

	N	95% Confidence Interval* Lower limit	**Observed estimate**	Upper limit	Significance tests* p-value	signif.**	Test
Total	*2048*	17.5	**22.5**	28.3			
Gender:							
Male	*863*	16.2	**21.0**	26.7	0.6170		(t-test)
Female	*1092*	17.6	**23.0**	29.4			
College Plans:							
None or under 4 Yrs.	*409*	16.2	**22.4**	30.1	0.8414		(t-test)
Complete 4 Yrs.	*1538*	16.7	**21.5**	27.2			
Region:							
Northeast	*284*	20.3	**32.2**	46.9	0.0616		(ANOVA)
North Central	*577*	14.5	**24.8**	39.0			
South	*851*	15.7	**22.5**	31.3			
West	*336*	4.5	**10.1**	21.2			
Population Density:							
Large MSA	*483*	19.1	**30.8**	45.6	0.0505	~	(ANOVA)
Other MSA	*892*	17.4	**24.8**	34.0			
Non-MSA	*673*	7.7	**13.5**	22.4			
Parental Education:							
1.0-2.0 (Low)	*205*	14.0	**21.4**	31.2	0.2953		(ANOVA)
2.5-3.0	*538*	18.6	**25.5**	33.9			
3.5-4.0	*539*	16.5	**22.4**	29.6			
4.5-5.0	*392*	14.5	**20.3**	27.6			
5.5-5.0 (High)	*199*	8.6	**13.8**	21.4			
Race (1-Year average):							
White	*1319*	10.9	**14.8**	19.7			(t-test)
Black	*166*	60.4	**71.1**	79.9	0.0001	sss	vs. White
Hispanic	*257*	12.6	**22.0**	35.5	0.2076		vs. White

* Confidence intervals and Significance tests incorporate clustered sampling design.
t-test tests the difference between the prevalences of two sub-categories.
ANOVA tests the hypothesis that the prevalences of all sub-categories are the same.

**level of significance: s=.05, ss=.01, sss=.001

Table B-5

Cigarette Brand Preferences

Newport use at 10th Grade, 1998

	N	95% Confidence Interval* Lower limit	**Observed estimate**	Upper limit	Significance tests* p-value	signif.**	Test
Total	*2708*	13.7	**17.7**	22.5			
Gender:							
Male	*1209*	11.7	**15.6**	20.3	0.3124		(t-test)
Female	*1460*	14.3	**19.1**	25.0			
College Plans:							
None or under 4 Yrs.	*653*	15.0	**20.6**	27.8	0.2584		(t-test)
Complete 4 Yrs.	*2003*	12.7	**16.4**	20.8			
Region:							
Northeast	*600*	19.9	**30.8**	44.5	0.0001	sss	(ANOVA)
North Central	*688*	8.6	**13.1**	19.5			
South	*1028*	12.1	**18.0**	26.0			
West	*392*	2.4	**4.8**	9.3			
Population Density:							
Large MSA	*636*	18.2	**27.1**	38.4	0.0117	s	(ANOVA)
Other MSA	*1197*	12.4	**18.8**	27.4			
Non-MSA	*876*	5.2	**9.4**	16.6			
Parental Education:							
1.0-2.0 (Low)	*244*	10.8	**15.6**	21.9	0.4932		(ANOVA)
2.5-3.0	*803*	14.1	**19.5**	26.4			
3.5-4.0	*687*	11.6	**15.8**	21.3			
4.5-5.0	*593*	14.0	**19.2**	25.7			
5.5-5.0 (High)	*271*	8.7	**12.9**	18.7			
Race (1-Year average):							
White	*2029*	9.4	**12.7**	17.0			(t-test)
Black	*178*	60.4	**70.7**	79.2	0.0001	sss	vs. White
Hispanic	*245*	10.7	**15.9**	22.9	0.3682		vs. White

* Confidence intervals and Significance tests incorporate clustered sampling design.
t-test tests the difference between the prevalences of two sub-categories.
ANOVA tests the hypothesis that the prevalences of all sub-categories are the same.

**level of significance: s=.05, ss=.01, sss=.001

Table B-6

Newport use at 12th Grade, 1998

	N	95% Confidence Interval* Lower limit	**Observed estimate**	Upper limit	Significance tests* p-value	signif.**	Test
Total	*2334*	10.3	**13.2**	16.9			
Gender:							
Male	*1118*	9.0	**12.1**	16.1	0.5686		(t-test)
Female	*1086*	10.2	**13.6**	18.0			
College Plans:							
None or under 4 Yrs.	*642*	9.8	**13.2**	17.5	0.7338		(t-test)
Complete 4 Yrs.	*1472*	9.2	**12.3**	16.2			
Region:							
Northeast	*432*	11.3	**21.5**	37.1	0.0033	ss	(ANOVA)
North Central	*677*	6.2	**9.0**	13.0			
South	*855*	10.9	**15.5**	21.6			
West	*370*	3.2	**5.9**	10.8			
Population Density:							
Large MSA	*641*	9.8	**16.2**	25.7	0.5934		(ANOVA)
Other MSA	*1089*	8.3	**11.6**	15.9			
Non-MSA	*603*	7.3	**13.1**	22.3			
Parental Education:							
1.0-2.0 (Low)	*170*	13.6	**20.8**	30.6	0.0443	s	(ANOVA)
2.5-3.0	*596*	11.2	**15.0**	19.8			
3.5-4.0	*659*	7.9	**10.7**	14.2			
4.5-5.0	*487*	7.4	**11.0**	16.0			
5.5-5.0 (High)	*273*	4.6	**8.7**	15.9			
Race (1-Year average):							
White	*1816*	5.6	**7.6**	10.1			(t-test)
Black	*106*	68.5	**82.3**	90.9	0.0001	sss	vs. White
Hispanic	*156*	13.6	**23.0**	36.1	0.0001	sss	vs. White

* Confidence intervals and Significance tests incorporate clustered sampling design.
t-test tests the difference between the prevalences of two sub-categories.
ANOVA tests the hypothesis that the prevalences of all sub-categories are the same.

**level of significance: s=.05, ss=.01, sss=.001

Table B-7

Cigarette Brand Preferences

Camel use at 8th Grade, 1998

	N	95% Confidence Interval* Lower limit	**Observed estimate**	Upper limit	Significance tests* p-value	signif **	Test
Total	*2048*	3.8	**5.4**	7.5			
Gender:							
Male	*863*	5.0	**7.3**	10.6	0.0718		(t-test)
Female	*1092*	2.6	**4.2**	6.7			
College Plans:							
None or under 4 Yrs.	*409*	1.9	**3.4**	5.9	0.0702		(t-test)
Complete 4 Yrs.	*1538*	4.4	**6.2**	8.8			
Region:							
Northeast	*284*	1.5	**4.0**	9.9	0.0709		(ANOVA)
North Central	*577*	3.9	**6.8**	11.5			
South	*851*	1.8	**3.3**	5.8			
West	*336*	5.1	**9.5**	17.0			
Population Density:							
Large MSA	*483*	2.8	**6.6**	14.5	0.8364		(ANOVA)
Other MSA	*892*	3.3	**5.0**	7.4			
Non-MSA	*673*	2.9	**5.0**	8.7			
Parental Education:							
1.0-2.0 (Low)	*205*	1.7	**4.6**	12.2	0.0051	ss	(ANOVA)
2.5-3.0	*538*	1.5	**3.4**	7.5			
3.5-4.0	*539*	2.3	**4.1**	7.3			
4.5-5.0	*392*	4.7	**7.7**	12.4			
5.5-5.0 (High)	*199*	8.4	**13.3**	20.4			
Race (1-Year average):							
White	*1319*	4.4	**6.3**	8.9			(t-test)
Black	*166*	0.6	**1.7**	5.1	0.0244	ss	vs. White
Hispanic	*257*	2.5	**4.1**	6.7	0.1738		vs. White

* Confidence intervals and Significance tests incorporate clustered sampling design.
t-test tests the difference between the prevalences of two sub-categories.
ANOVA tests the hypothesis that the prevalences of all sub-categories are the same.

**level of significance: s=.05, ss=.01, sss=.001

Table B-8

Camel use at 10th Grade, 1998

	N	95% Confidence Interval* Lower limit	**Observed estimate**	Upper limit	Significance tests* p-value	signif **	Test
Total	*2708*	5.7	**7.3**	9.3			
Gender:							
Male	*1209*	7.5	**9.9**	13.0	0.0028	ss	(t-test)
Female	*1460*	3.4	**4.9**	7.2			
College Plans:							
None or under 4 Yrs.	*653*	5.9	**7.9**	10.6	0.5754		(t-test)
Complete 4 Yrs.	*2003*	5.3	**7.0**	9.3			
Region:							
Northeast	*600*	5.0	**7.4**	10.8	0.0873		(ANOVA)
North Central	*688*	7.7	**10.7**	14.7			
South	*1028*	2.9	**5.4**	9.8			
West	*392*	4.1	**6.2**	9.4			
Population Density:							
Large MSA	*636*	2.7	**5.5**	10.6	0.6975		(ANOVA)
Other MSA	*1197*	5.5	**7.8**	10.8			
Non-MSA	*876*	5.2	**8.0**	12.1			
Parental Education:							
1.0-2.0 (Low)	*244*	0.8	**2.5**	7.1	0.0012	ss	(ANOVA)
2.5-3.0	*803*	3.4	**4.9**	6.9			
3.5-4.0	*687*	6.2	**8.5**	11.5			
4.5-5.0	*593*	5.9	**8.7**	12.8			
5.5-5.0 (High)	*271*	8.6	**13.1**	19.5			
Race (1-Year average):							
White	*2029*	6.5	**8.3**	10.7			(t-test)
Black	*178*	0.0	**0.0**	2.1	0.0008	sss	vs. White
Hispanic	*245*	0.1	**0.4**	1.8	0.0001	sss	vs. White

* Confidence intervals and Significance tests incorporate clustered sampling design.
t-test tests the difference between the prevalences of two sub-categories.
ANOVA tests the hypothesis that the prevalences of all sub-categories are the same.

**level of significance: s=.05, ss=.01, sss=.001

Table B-9

Cigarette Brand Preferences

Camel use at 12th Grade, 1998

	N	95% Confidence Interval* Lower limit	**Observed estimate**	Upper limit	Significance tests* p-value	signif **	Test
Total	*2334*	7.9	**9.6**	11.6			
Gender:							
Male	*1118*	8.6	**11.2**	14.6	0.1188		(t-test)
Female	*1086*	6.5	**8.4**	10.8			
College Plans:							
None or under 4 Yrs	*642*	6.4	**8.3**	10.8	0.1836		(t-test)
Complete 4 Yrs	*1472*	8.4	**10.6**	13.2			
Region:							
Northeast	*432*	5.7	**8.3**	12.0	0.0060	ss	(ANOVA)
North Central	*677*	5.9	**8.3**	11.7			
South	*855*	5.5	**7.6**	10.3			
West	*370*	11.7	**17.9**	26.4			
Population Density:							
Large MSA	*641*	6.5	**9.7**	14.3	0.2451		(ANOVA)
Other MSA	*1089*	8.8	**11.1**	13.8			
Non-MSA	*603*	3.7	**6.7**	11.9			
Parental Education:							
1.0-2.0 (Low)	*170*	1.5	**3.6**	8.3	0.0001	sss	(ANOVA)
2.5-3.0	*596*	3.7	**5.4**	7.8			
3.5-4.0	*659*	6.6	**8.9**	11.8			
4.5-5.0	*487*	9.2	**12.0**	15.4			
5.5-5.0 (High)	*273*	16.9	**21.6**	27.2			
Race (1-Year average):							
White	*1816*	9.0	**10.9**	13.2			(t-test)
Black*	*106*	0.0	**0.0**	3.5	0.0001	sss	vs. White
Hispanic	*156*	1.2	**3.4**	9.2	0.0214	s	vs. White

* Confidence intervals and Significance tests incorporate clustered sampling design.
t-test tests the difference between the prevalences of two sub-categories.
ANOVA tests the hypothesis that the prevalences of all sub-categories are the same.

**level of significance: s=.05, ss=.01, sss=.001

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